

WE CLAIM:

1. A method in a computer system for isolating and teaching concepts of a programming language, comprising:

providing an interpreter interface including a code entry portion adapted for receiving input from a user;

5 receiving a single code entry from the user via the code entry portion;

processing the code entry; and

in response to the processing, displaying a visual cue to the user.

2. The method of Claim 1, wherein the processing includes comparing syntax of the code entry to a set of syntax rules for the programming language to identify a syntax error or validity of the code entry syntax.

3. The method of Claim 2, wherein when the comparing identifies the syntax error, the displaying includes retrieving an error code based on the syntax error and the visual cue includes the error code.

4. The method of Claim 3, wherein the visual cue further includes the received code entry.

5. The method of Claim 4, wherein the interpreter interface includes a code entry history portion for displaying the error code, the received code entry, and previously received and processed code entries.

6. The method of Claim 1, wherein the processing includes comparing the code entry to a set of syntax and language rules for the programming language to identify errors and when no errors are identified, executing the
5 code entry.

7. The method of Claim 6, wherein the visual cue includes displaying a semantic view of effects of the executing the code entry.

8. The method of Claim 7, wherein the semantic view includes displaying a type, a name, and a value of a variable declared and assigned in the code entry.

9. The method of Claim 1, wherein the displaying includes displaying objects created by or manipulated by execution of the code entry.

10. The method of Claim 1, wherein the displaying includes displaying arrays created by or manipulated by execution of the code entry.

11. A computer program product for isolating and teaching concepts of a programming language, comprising:

first computer code devices configured to cause a computer to receive a programming statement from a user;

5 second computer code devices configured to cause a computer to process the programming statement including comparing the programming statement to syntax rules for the programming language to identify presence or absence of a syntax error in the programming statement;

10 and third computer code devices configured to cause a computer to display a visual cue to the user based on the identified presence or absence of the syntax error.

12. The computer program product of Claim 11, further including fourth computer code devices configured to cause a computer to retrieve an error code based on the identified syntax error and wherein the visual cue
5 includes the retrieved error code.

13. The computer program product of Claim 11, wherein the first computer code devices are further configured to provide an interpreter interface including a code entry portion for performing the receiving of the programming statement and a code entry history portion for displaying at least part of the visual cue, the received programming statement, and previously received and processed programming statements.

14. The computer program product of Claim 11, further including fourth computer code devices for causing a computer to execute the programming statement when the second computer code devices identifies the absence of the syntax error.

15. The computer program product of Claim 14, further including fifth computer code devices for displaying to the user a semantic view of effects of the executing by the fourth computer code devices.

16. A computer system for teaching programming language concepts, comprising:

means for receiving a code entry from a user;
a syntax validator processing the received code entry based on syntax rules for the programming language to determine syntax validity or a syntax error; and
a semantic view engine displaying a semantic view to the user based on the determined syntax validity or the syntax error.

17. The computer system of Claim 16, wherein the semantic view includes an error statement selected based on the syntax error.

18. The computer system of Claim 17, wherein the semantic view includes effects of execution of the code entry including created variable values, object configurations, and arrays.

19. The computer system of Claim 16, further including an execution engine operating to execute the code entry when the syntax is determined valid, wherein the code entry is executed based on a previously entered code entry.

20. The computer system of Claim 16, wherein the receiving means includes an interface for displaying an interpreter interface with a code entry window for accepting the code entry by the user and for displaying a code entry history having previously-entered code entries and error statements corresponding to the previously-entered code entries.